

**Listing of Claims:**

1. (Currently Amended) A method of assaying whether an agent affects the beating rate of a cardiac cell which comprises:
  - (a) contacting a cardiac cell in vitro with an effective amount of ~~a compound~~ a composition comprising a nucleic acid encoding an ion channel effective in vitro to cause a sustainable beating rate;
  - (b) measuring the beating rate after step (a);
  - (c) contacting the cardiac cell with an agent to be assayed for its effects on the beating rate;
  - (d) measuring the beating rate after step (c); and
  - (e) comparing the difference between step (b) and step (d), thereby determining whether the agent affects the beating rate.
2. (Previously Presented) The method of claim 1, wherein the cardiac cell is mammalian.
3. (Original) The method of claim 1, wherein the cardiac cell is a cardiac myocyte.
- 4-8. (Canceled)
9. (Currently Amended) The method of claim 1, wherein the ~~compound~~ composition comprises a nucleic acid which encodes acids which encode MiRP1 and a HCN channel.
10. (Canceled)
11. (Currently Amended) The method of claim 9, wherein the ~~HCN is HCN2~~ composition further comprises a nucleic acid encoding a MiRP1.

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Currently Amended) A method of assaying whether an agent affects the beating rate of cardiac myocytes which comprises:

- (a) disaggregating *in vitro* cardiac myocytes from a heart and contacting the myocytes *in vitro* with an amount of a composition comprising a nucleic acid encoding an ion channel effective to cause a sustainable beating rate;
- (b) measuring the beating rate of the cardiac myocytes after step (a);
- (c) contacting a set of the cardiac myocytes from step (b) with an agent to be assayed for its effects on the beating rate;
- (d) measuring the beating rate after step (c); and
- (e) comparing the measurements from step (b) and step (d), thereby determining whether the agent affects the beating rate.

16. (Original) The method of claim 15, wherein the measuring steps are performed with a calcium sensitive dye and a photodiode.

17-31. (Withdrawn)

32. (Currently Amended) The method of claim 1, wherein the composition comprises a nucleic acid encoding a HCN channel and a nucleic acid encoding a MiRP1, and the composition is introduced into the cell by ~~contacting is performed by~~ administration of an adenovirus infection, viral-mediated infection, liposome-mediated transfer, microinjection, electroporation, or by coculturing the cell with a the composition ~~nucleic acid encoding MiRP1 and HCN.~~
33. (Previously added) The method of claim 32, wherein the HCN is HCN1.
34. (Previously added) The method of claim 32, wherein the HCN is HCN2.
35. (Previously added) The method of claim 32, wherein the HCN is HCN4.
36. (New) The method of claim 9, wherein the HCN channel is HCN2.
37. (New) The method of claim 9, wherein the HCN channel is HCN1.
38. (New) The method of claim 9, wherein the HCN channel is HCN4.
39. (New) The method of claim 36, wherein the composition further comprises a nucleic acid encoding MiRP1.
40. (New) The method of claim 37, wherein the composition further comprises a nucleic acid encoding MiRP1.
41. (New) The method of claim 38, wherein the composition

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further comprises a nucleic acid encoding MiRP1.

42. (New) The method of claim 1, wherein the nucleic acid is a cardiac pacemaker gene.